

REMARKS

In the Office Action, the Examiner rejected claims 1-5 and 9-14 under § 102 as being anticipated by USP 5,889,677 issued to Yasuda (Yasuda). The Examiner rejected claims 1, 5, 9, and 10 and 14 under § 102 as being anticipated by USP 6,543,043 issued to Wang et al. (Wang). The Examiner rejected claims 1, 9, and 10 as being anticipated by USP 6,519,751 issued to Sriram et al. (Sriram). In addition, the Examiner rejected claims 6-8 and 15-17 for their dependence upon a rejected base claim. The Examiner, however, found claims 6-8 and 15-17 otherwise allowable. In this Amendment, Applicants have amended claims 1, 7, 8, 10, 16, and 17. In addition, Applicants have canceled claims 5, 6, 14, and 15. Accordingly, claims 1-4, 7-13, 16, and 17 will be pending after entry of this Amendment.

I. Allowable Claims

In the Office Action, the Examiner found that claims 6-8 and 15-17 contain allowable subject matter, but objected to these claims as being dependent upon rejected base claim 1 or 10. Applicants thank the Examiner for the finding of allowability of these claims.

Applicants have rewritten claim 1 to include the limitations of claim 6 and its intervening base claim 5. In addition, Applicants noted an error in original claim 6. Claim 6 incorrectly recited “when embedding a first and **second** route will make the set of unrouted nets unroutable, identifying a fourth route for the second net”. (emphasis added). This limitation did not correlate to the preceding limitation in claim 6 of “determining whether embedding the first and **third** routes in the region will make a set of unrouted nets in the region unroutable”. (emphasis added). Accordingly, when rewriting claim 1, the Applicants changed the limitation of claim 6 from “when embedding the first and second routes” to “when embedding the first and third routes”.

Moreover, Applicants canceled claims 5 and 6 and amended claims 2-4, 7 and 8 to be dependent on claim 1. Applicants thus respectfully submit that claims 1-4, 7 and 8 are allowable.

Applicants have rewritten claim 10 to include the limitations of claim 15 and its intervening base claim 14. In addition, Applicants noted an error in original claim 15. Claim 15 incorrectly recited “when embedding a first and **second** route will make the set of unrouted nets unroutable, identifying a fourth route for the second net”. (emphasis added). This limitation did not correlate to the preceding limitation in claim 15 of “determining whether embedding the first and **third** routes in the region will make a set of unrouted nets in the region unroutable”. (emphasis added). Accordingly, when rewriting claim 10, the Applicants changed the limitation of claim 15 from “when embedding the first and second routes” to “when embedding the first and third routes”. Moreover, Applicants canceled claims 14 and 15 and amended claims 11-13, 16, and 17 to be dependent on claim 10. Applicants thus respectfully submit that claims 10-13, 16, and 17 are allowable.

II. Rejections to Claim 9

The Examiner rejected claim 9 under § 102 as being anticipated independently by Yasuda, Wang, and Sriram. The Applicants respectfully traverse this rejection.

Claim 9 recites a method of routing a group of nets within a region. This method identifies a route for a net. The method determines whether to embed the identified route based on an estimated routing cost of a set of unrouted nets in the region when the region contains the identified route.

Applicants respectfully submit that the cited references do not disclose such a method. None of cited references disclose a method that accounts for an estimated routing cost of a set of unrouted nets when determining whether to embed a route for a net.

The Examiner identifies Figures 1-3, 36 and 37, and columns 14 and 42 of Yasuda as disclosing the claimed determinate of whether to embed a route based on an estimated routing cost of a set of unrouted nets limitation of claim 9. These passages of Yasuda, however, disclose a wiring cost that accounts for the congestion of routed nets. This wiring cost does not account for a cost of a set of unrouted nets. Therefore, Yasuda does not disclose, teach, or even suggest the recited method of claim 9 that determines whether to embed a route based on an estimated routing cost of a set of unrouted nets.

The Examiner identifies Figure 4 and columns 11 and 12 of Wang as disclosing the claimed determinate of whether to embed a route based on an estimated routing cost of a set of unrouted nets limitation of claim 9. These passages of Wang, however, disclose a routing process that determines routability of routes according to a conventional cost based upon congestion of routed nets. Therefore, Wang does not disclose, teach, or even suggest the recited method of claim 9 that determines whether to embed a route based on an estimated routing cost of a set of unrouted nets.

The Examiner identifies Figure 7 and column 3, lines 24-29 of Sriram as disclosing the claimed determinate of whether to embed a route based on an estimated routing cost of a set of unrouted nets limitation of claim 9. These passages of Sriram, however, disclose a cost function for minimizing jogs, L-overlaps, and X-overlaps. This cost function does not account for a routing cost of a set of unrouted nets. Therefore, Sriram does not disclose, teach, or even suggest the recited method of claim 9 that determines whether to embed a route based on an estimated routing cost of a set of unrouted nets.

Accordingly, Applicants respectfully submit that the cited references do not render claim 9 unpatentable. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the § 102 rejections of claim 9.

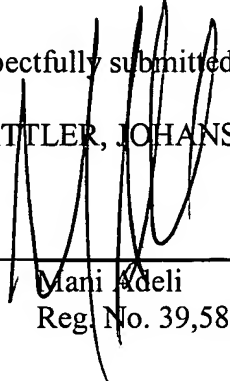
CONCLUSION

In view of the foregoing, it is submitted that all pending claims, namely claims 1-4, 7-13, 16, and 17, are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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